REMARKS

The Official Action of October 2, 2002 has been carefully considered and reconsideration of the application as amended is respectfully requested.

The basis for the amendment in step (a) of Claim 1 is found in the specification on page 8, lines 21 to 25 and page 7, line 28 to page 8, line 9. Furthermore, this claim contains the limitations of previous Claim 12. As regards the rejection under 35 USC 112, first paragraph, with respect to Claim 1 and the definition of the polyuronic acids, the claims have now been limited to the recited polyuronic acids and it is respectfully submitted that one of skill in the art could practice the invention as claimed without undue experimentation. In particular, it is believed that one skilled in the art would know how to select 1,4-linked polyuronic acid blocks as further defined by the maximum average molecular weight and would be able routinely to determine which, if any, would not result in the claimed product simply by following the Examples in the specification. By contrast, if the Examiner disagrees, he is respectfully requested to provide a reasonable basis to question the enablement for the claimed invention to satisfy the USPTO burden in this regard. See MPEP Section 2164.04. (It is respectfully submitted that the Examiner has thus far provided only conclusory allegations that the claimed invention covers non-exemplified embodiments.)

The amendment to Claim 8 is based on page 13, lines 30 to 33. With respect to the rejection under 35 USC 112, first paragraph, as regards "an acid" and "the pH", one of skill in the art would use an acid (such as specifically disclosed hydrochloric

acid) which is capable of attaining a pH so as to create the free form of the acid. Therefore, the amended form of step (1) of Claim 8 as amended should meet the requirements of 35 USC 112, first paragraph. It is further noted that the last optional clause of Claim 13 has been split off into new Claim 14. Also the term "predominately" no longer occurs in Claim 1 and "preferably" has been deleted in Claims 4 and 5.

Newly added Claim 15 corresponds to Claim 1 as presently on file combined with Claim 11 and intervening Claims 8 and 7 with the removal of the objectionable term "predonimantly". New Claims 16 - 24 correspond to Claim 2 - 6, 9 10, 13 and 14, respectively, made directly or indirectly dependent on new independent Claim 15.

The Examiner has rejected Claim 8 under 35 USC 112, first paragraph, as not enabling with respect to the broad classes of low molecular wt. alcohols and low molecular wt. carboxylic acids as claimed in addition to referring to the unpredictability of polyuronic acids (presumably as recited in original Claim 1). In this connection the Examiner has referred to the fact that more than routine experimentation is involved in selecting the particular components and has referred to decisions in this regard. However, as stated in section 2164.08(b) of the MPEP :

> "The standard is whether a skilled person could determine which embodiments that were conceived, but not yet made, would be inoperative or operative with expenditure of no more effort than is normally required in the art."

One skilled in the art reading the specific recitation of acetic acid and propionic acid would appreciate what "low molecular wt. carboxylic acids" were appropriate. The

same would apply to low molecular wt. alcohols in light of specifically mentioned methanol, ethanol, n-propanol and isopropanol. In other words one skilled in the art would expect that adjacent homologs of these classes of compounds would be successfully used. Similarly the disclosure of polyguluronic, polymannuronc and polygalacturonic acid as a polyuronic acid suggests to one skilled in the art closely related members of this class as being successfully used. In this respect the polyuronic acid is now more exactly defined in Claim 1 as discussed above. Therefore, it is respectfully believed that these terms in the claims are free from objection on the basis of an alleged lack of enablement.

Applicant has noted the rejection of the claims under 35 USC 103(a) as being unpatentable over the indicated references. However, applicant has noted with appreciation the indication by the Examiner that Claims 11 and 12 would be allowable if rewritten in independent form including all of the limitations of base claim and any intervening claims. Claims 1(amended) amd15 (new) correspond to Claims 12 and 11, respectively in this regard.

It is thus believed that the application should now be condition for allowance, and favorable consideration in this respect is respectfully requested.

Respectfully submitted,

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Claim 1 (amended). A method of producing a polyuronic acid having an average degree of polymerization less than 20, comprising the steps:

(a) providing a solution containing 5 wt.% or more of a [high molecular weight] polyuronic acid consisting essentially of a 1,4-linked polyuronic acid block, wherein the polyuronic acid has a weight average molecular weight less than or equal to 50,000 g/mole and is in the form of a [predominately as its] lithium salt in amount enough for obtaining the 5 wt.% or more concentration of said salt;

(b) adding hydrogen peroxide and a ferrous salt to the solution prepared in step (a) to oxidatively degrade the high molecular weight polyuronic acid; and

(c) isolating a polyuronic acid having an average degree of polymerization less than 20 obtained in step (b).

Claim 4 (amended) The method of Claim 1 wherein the amount of hydrogen peroxide [used] is [preferably] in the range of 20 to 220 mole percent relative to the [high molecular weight] polyuronic acid.

Claim 5 (amended) The method of Claim 1 wherein the amount of the ferrous salt [used] is [preferably] in the range of 0.01 to 10 mole percent relative to the hydrogen peroxide.

Claim 8 (amended) The method of Claim 7 wherein the product polyuronic acids are precipitated from the solution prepared in step (c2) by one or a combination of the

following methods:

(1) lowering the pH by addition of an acid so that the lithium salt of the polyuronic acid is converted into the free form of the polyuronic acid,

(2) adding a low molecular weight carboxylic acid,

(3) adding a low molecular weight alcohol, or

(4) evaporating the liquid phase.

Claim 13 (amended) The method of Claim 1 wherein step (c) is omitted and the product is obtained as a solution containing [predominately] polyuronic acids, having an average degree of polymerization less than 20 [and if necessary, insoluble iron products are removed therefrom].